



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

December 22, 1988

Mr. James E. Crowley  
Ciba-Geigy Corporation  
444 Saw Mill River Road  
Ardsley, NY 10502

Superfund Records Center

SITE: Ciba-Geigy

BREAK: 19,00

OTHER: 651238

RE: Ciba-Geigy Consent Agreement and Order

Dear Mr. Crowley:

This letter is in response to your November 17, 1988 letter regarding Ciba-Geigy's comments on EPA's Draft Consent Agreement. As a general observation EPA feels that Ciba-Geigy did not provide adequate justification for its position on a number of comments. This concern is reflected in the Agency's response. EPA's response is divided into four (4) parts (i.e., cover letter, technical, legal, & summary of phases). EPA attempted to address all comments but some comments appeared to be so vague that EPA may not have addressed the specific point Ciba-Geigy was trying to convey.

EPA has tentatively scheduled a meeting on January 20, 1989. The purpose of this meeting is to discuss specific changes in the draft order based on Ciba-Geigy's comments and EPA's response. Ciba-Geigy should bring a marked up copy of the draft order and be prepared to discuss any proposed changes which seek to resolve the issues or differences addressed in the attached comments. If there are any other issues they can be briefly discussed at the meeting.

If you have any questions, please contact Frank Battaglia at (617) 573-9643.

Sincerely,

*Mary Jane O'Donnell*

Mary Jane O'Donnell, Chief  
NH & RI Waste Regulation Section

cc: Carol Wasserman - EPA  
John Smaldone - EPA  
Roger Henning - Woodward-Clyde Consultants

Attachments



SEMS DocID

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### Cover Letter Comments

✓ 1) Comment on 1st Page: "At the meeting...to the Agency."

Response: This paragraph does not explain why the content and timeframes in EPA's order are inappropriate. EPA does not believe that the timeframes are arbitrary. Ciba-Geigy's response does not address acceptable timeframes based on its vision of the project. Therefore, the Agency cannot accept Ciba-Geigy's premise. If the main concern is the scheduling set forth in EPA's order, Ciba-Geigy should review the "subsequent modification" section on page 82 of the order. This section addresses extension of deadlines.

✓ 2) Comment on 1st Page: "The draft...remediation activities."

Response: The concept of chemical analyses and site characterization should be divided into 2 parts (on-site, and off-site soils). EPA believes that the on-site investigation should include "chemical analyses and characterization concurrently". As this concept applies to the off-site soil investigation, a different conclusion is probable. EPA believes that the off-site soil investigation can be "sequenced" or "phased" with each subsequent phase proceeding only when the previous phase indicates the need to proceed. In summary, EPA feels that the order need not be modified as it pertains to the on-site investigation but will need modification based on the off-site soil discussion above. EPA will propose changes in the order to reflect this phased approach to the off-site investigation. EPA expects that the initial phase will include chemical & physical characterization of the off-site soils only to the degree necessary to identify additional media of concern. Details of any study will be discussed during the RFI Proposal stage which will commence with the signing of this order.

3) Comment on 2nd Page: "The plan requires...their presence."

Response: The draft order does not require a "health risk assessment which specifies five (5) sampling rounds of Appendix IX compounds." The health risk assessment in the draft order specifies identification of indicator chemicals through application of the Superfund Public Health Evaluation Manual, 1986. EPA believes that an initial on-site evaluation will consist of analysis for Appendix IX parameters and other

substances that meet the definition of hazardous waste as defined in the draft order. These other substances will generally be selected from the universe of products, intermediates, raw materials, and degradation/reaction products associated with the site. Subsequent analysis of off-site soils could then be based on these findings.

✓ 4) Comment on 2nd Page: "Ciba-Geigy...local community."

Response: Review of products, intermediates, raw materials, and degradation/reaction products is necessary to determine whether a substance is hazardous based on the definition of hazardous waste in the draft order. On-site analysis will be conducted for those substances that meet the definition of hazardous waste. EPA does not agree with the "action level" concept. EPA believes that it is premature to set standards in the absence of all the information required in the RFI. EPA does not believe that an agreement as to what level of concentration is required to present a particular risk is necessary at this time as a preclusion to understanding the source chemistry, extent of contamination and geology/hydrology of the subject areas. EPA would agree that a more comprehensive understanding of source chemistry and concentrations is necessary. EPA does not necessarily agree that public concern would be minimized simply because of an agreement between EPA and the facility. Public concern will have to be managed in all cases by communicating the sensibility of the corrective action process and the safeguard assurances it provides as in interim measures.

✓ 5) Comment on 3rd Page: "Ciba-Geigy agrees...will be analyzed."

Response: It is not clear as to when a work plan for off-site investigations will be submitted and whether off-site investigations are a part of Phase I. EPA expects all work plans for all areas subject to the order to be submitted within sixty (60) days of the signing of the order. The proposed schedules in the work plans may reflect the initiation of certain tasks upon completion of others such as identification of compounds to be investigated off-site. Ciba-Geigy's "Summary Of Phases For The RFI" indicates that off-site studies are a component of Phase I activities. EPA believes that all areas, both on-site and off-

site, and all media of concern are to be sampled at least twice during Phase I.

The term "characterization" has been used throughout Ciba-Geigy's comments and in EPA's draft order. Its meaning may not be the same as used in these documents. EPA expects source areas of contamination to be "characterized", the extent of the contamination to be "characterized", and the geology and hydrology (environmental setting) to be "characterized". It is not apparent which context was Ciba-Geigy's intended use of the term "characterization".

6) Comment on 3rd Page: "During Phase I...undertaken."

Response: It is not clear how broadly Ciba-Geigy intends to apply this concept. EPA will withhold comment until the RFI proposal is submitted. EPA believes, however, that an understanding of the on-site geology and hydrology is necessary to validate the adequacy of monitoring well networks and the adequacy of the public health and environmental risk evaluation. Consequently, EPA anticipates that the RFI proposal will address the acquisition of the above referenced information as may be related to each subject area of the order.

Technical Comments

- ✓ 1) Page 9, Comment: "Accuracy of Hazardous... Ciba-Geigy."  
Response: These listed hazardous wastes were identified by Ciba-Geigy in the Part A application submitted in November 1980. More substances (i.e., products, raw materials, intermediates and degradation/reaction products in various media) may be identified by Ciba-Geigy during this investigation.
- ✓ 2) Page 13, Comment: "The data which...quantitative data."  
Response: EPA is aware of this point and understands that the data is viewed as qualitative and as such has been used for purposes of identifying contaminant releases. Ciba-Geigy's response does not indicate that EPA's statement is incorrect, nor does it indicate that the alleged well construction resulted in a wrongful conclusion by EPA.
- ✓ 3) Page 13, Comment: "GW1 is located...water contamination."  
Response: A known contaminant (Toluene) of SWMU #11 was found at Piezometer GW1. Ciba-Geigy may want to put in other observation wells to aid in identifying off-site sources of contamination in this area. This may confirm whether off-site ground water is contributing to the source of contamination found at GW1.
- ✓ 4) Page 13-14, Comment: "Ground Water Analyses...buried channels."  
Response: EPA believes that it is reasonable to conclude that individual SWMU's are contributing to ground water contamination. Although it is possible that man made features may affect very local ground water flow, EPA believes that the Pawtuxet River is a regional ground water discharge point. Consequently some ground water may follow preferential pathways but it is unlikely that all ground water flowing towards this discharge point behaves

similarly. EPA is surprised that underground utility lines at Ciba-Geigy occur in the saturated zone. Ciba-Geigy should identify the location of these lines as they might affect geophysical surveys and the direction of ground water flow.

- ✓ 5) Page 15, Comment: "More data would...in the area."

Response: EPA agrees that further investigation is needed off-site to determine the extent of contamination. The Agency acknowledges that some constituents could originate from sources other than Ciba-Geigy. Conversely, it is also recognized that substances originating from Ciba-Geigy have been observed off-site.

- ✓ 6) Page 17, Comment: "Sediment samples...Ciba-Geigy Processes."

Response: Ciba-Geigy has reported direct discharges to the river; the Pawtuxet River is a point of ground water discharge from the production area where SWMU's released hazardous wastes/constituents; and processes of overland flow could transport contaminants from on-site to the river. EPA would encourage Ciba-Geigy to further quantify upstream chemistry. This is consistent with the position taken in your RFI outline submitted with your letter.

- ✓ 7) Page 18, Change to: "As such,...of one mile."

Response: EPA proposes to change the paragraph to read "As such, EPA believes there is a need to obtain significant further information to identify and evaluate all possible sources of contamination at the facility and off-site, which are due to facility operations, and to identify and assess the adverse environmental or public health effects at the facility and off-site, which are due to facility operations, and to determine what additional corrective action and corrective measures, if any, are

1. Migrate limits on-site to facility operations

necessary at the facility and off-site." See comment # 13.

- ✓ 8) Page 19, Change to: "Within ninety (90) days..."

Response: EPA believes that these timeframes are appropriate and has no basis for such a change.

- ✓ 9) Page 21, Comment: "No media...this Agreement."

Response: EPA concurs with this recommendation to investigate SWMU #6 based on recent analysis of that unit. EPA will make changes to the order that will address SWMU #6 consistent with Ciba-Geigy's comment.

- ✓ 10) Page 21, Comment: "No media sampling...quality conditions."

Response: Ciba-Geigy should justify background well locations based on a thorough understanding of the geology and hydrology in those areas.

- ✓ 11) Page 23, Comment: "Measurement of...and order."

Response: The requirement on Page 23 of EPA's draft order which this comment addresses does not specify the completion of these determinations within Phase I. Phase I tasks and the Phase I report do not specify the completion of these determinations within Phase I. Although EPA agrees that a full year of monitoring water levels may provide the data necessary for the specified determinations, it is not obvious that this is the only manner to obtain the necessary information. EPA believes that historic data is available which could be supplemented by future determinations to reasonably quantify the specified determinations.

- ✓ 12) Page 24, Comment: "Some of...field observations."

Response: EPA's requirements in this regard do not intend to restrict the application of sound decisions in the field. EPA's order requires a proposal, not

necessarily a final determination, which we believe can be reasonably made based on the present understanding of the site geology and hydrology. EPA expects Ciba-Geigy to make a proposal based on this information.

- ✓ 13) Page 24, Change to: "respondent...to the facility."

Response: EPA believes that Ciba-Geigy's proposed change is no more specific than EPA's current language. The Agency believes that off-site studies in general should be performance based and not limited by any arbitrary distance.

- ✓ 14) Page 24-25 Comment: "There are...to sediments."

Response: Typographical errors occur in this paragraph. The paragraph should read, ..."surface waters and sediments as applicable."

- 15) Page 25, Comment: "A strict...through the environment."

Response: EPA is anticipating a thorough and comprehensive evaluation of a segment of the Pawtuxet River. This includes understanding those factors which affect the deposition and erosion of sediments, such as velocity and mixing zones. EPA believes that without this basic understanding the development of a credible sampling and monitoring program is very difficult if not impossible. EPA recognizes the dynamic nature of open channel flow and fluvial transport processes and expects that Ciba-Geigy will be capable, over the course of the first two phases of the project, to reasonably define these factors and the extent of any contamination from Ciba-Geigy.

The requirements of the order are intended to allow for determining the manner in which releases may be distributed within the receiving water body. EPA believes this should include physical and chemical characteristics of the receiving water, the nature of the



discharge and the characteristics of the contaminants.

EPA agrees that a phased approach is necessary. We also believe the information required by the order is applicable to the determinations which are to be made. Ciba-Geigy's proposal is very general and consequently cannot be fully evaluated with respect to its ability to meet the conditions of the order. EPA would reconsider thickness profiles of surface water sediments to apply to recent sediments and not glacial sediments. Sediments are soils and/or sludges which are loosely consolidated and are not areas where scour is present.

Ciba-Geigy's comments also addressed requirements for soils in the RFI Report and their application in this matter. The following attempts to explain those requirements. Hydraulic conductivity is an essential physical property affecting contaminant mobility in soil. Soil bulk density is used for estimating the relative mobility of attenuated constituents in ground water. It is inversely proportional to the average linear velocity of a constituent. The particle size distribution has two major uses in soil investigations:

(1) estimation of the hydraulic conductivity using the Hazen formula, and (2) particle size affects sorptive capacity and, therefore, the potential for retardation of contaminants in the soil. Soil pH affects the mobility of potentially ionized organic and inorganic chemicals in the soil.

✓ 16) Page 25, Comment: "EPA should...center of property."

Response: See comment # 13.

✓ 17) Page 26, Comment # 1 & 2

Response: Comment #1 is a correct understanding of the order. Ciba-Geigy should explain in detail in the Current Assessment the

degree to which historical analyses satisfy the requirements of the order for Appendix IX analyses.

✓ 18) Page 31-32 Comment: "It is important...(see also page 73)."

Response: The RFI Proposal may indicate that an EPA representative will be present to obtain split samples, and EPA will provide sample containers and will incur the cost of analyses for EPA's samples. This could also be clarified in the sampling section on page 73 of the order. Page 73 of the order may need to be amended to require additional time for advance notification of any sample collection activity. After further consultation with EPA's Laboratory, EPA is proposing ten (10) working days.

✓ 19) Page 42, Comment: "This time frame...time constraints."

Response: The comment is not specific with respect to inconsistencies. The referenced outline does not include a schedule and consequently serves little purpose in regard to acceptable timeframes. As an example, the concept of identifying on-site contaminants prior to off-site testing may be reasonable if the delay is minimized.

✓ 20) Page 42, Comment: "Change to Phase I...relevant areas,..."

Response: EPA agrees with the proposed changes.

✓ 21) Page 42, Comment: "The 30 day...Ciba-Geigy's comments."

Response: Ciba-Geigy has not indicated what would be a sufficient time nor demonstrated that 30 days is insufficient. EPA believes that most of the report could be compiled during implementation of Phase I tasks. EPA cannot address the validity of the argument without seeing the entire Phase I and Phase II perspective of a schedule.

✓ 22) Page 43, Comment: "Not only must...independent study."

Response: EPA believes that the PHERE can be developed concurrently with the

implementation of Phase I and Phase II tasks and that a separate timeframe is not necessary. EPA will evaluate and comment on the PHERE and RFI Report concurrently. EPA believes that sufficient data will exist after approval of the Phase I Interim Report (or will be obtained early in Phase II) such that the PHERE may be completed. Ciba-Geigy is at liberty to manage whatever resources are deemed necessary in completing the tasks required by the time specified in the order.

✓ 23) Page 44, Comment: "Phase I...and interpretation."

Response: This comment does not appear to specifically address the referenced requirement to submit a report and proposal. EPA cannot evaluate Ciba-Geigy's comment without a schedule. EPA would recommend the scheduling of sampling and analyses as early as possible. It is EPA's experience that a complete Appendix IX analyses may take less time than stated in the comment.

✓ 24) Page 44, Comment: "A proposed schedule...Phase II tasks."

Response: This comment is not specific enough to evaluate. EPA was unable to identify the proposed expanded time limit referenced in this comment. EPA has no reason to believe that the specified timeframe is unachievable.

✓ 25) Page 46, Comment: "See comment page 43"

Response: See response # 22

✓ 26) Page 48-49 Comment: "Section 2 - soils...from the facility."

Response: EPA is considering changes to Section I.D.1.d. on page 25 of the draft order with respect to the off-site environment. Information regarding published data should be submitted as part of the Current Assessment Summary. Any further studies should begin during Phase I. See cover letter comment # 2.

✓ 27) Page 52, Comment: "With a limited...broader data base."  
"Change to...ground water,"

Response: EPA generally agrees with the associated comment on the condition that target or indicator parameters are the entire subset of identified substances referred to in comment # 3 on the cover letter.

✓ 28) Page 53, Comment: "Although...on the results."  
(Both comments on sections e & f)

Response: EPA's order does not specify, and is not meant to imply, limitation of the extrapolation of contaminant movement to the use of numerical models. The RFI proposal should be explicit in the manner in which the extrapolation is to take place.

✓ 29) Page 53, Comment: "This statement...in time."

Response: This comment is correct. EPA is requiring the investigation of the rate of migration of contaminants.

✓ 30) Page 58, Comment: "In the case...made to comply."

Response: This order requires proposed media protection standards including selection and justification of any timeframes for achieving these standards. EPA will set standards after evaluating this proposal. The order does not address the actual clean-up phase and therefore, does not address penalties associated with timeframes for clean-up. This will be addressed in a subsequent order or action as necessary.

✓ 31) Page 62, Comment: "Determination...background?"

Response: Ciba-Geigy, should it pursue background standards, must demonstrate that the definition in the order is obtained. In anticipation of the establishment of media protection standards, Ciba-Geigy is at liberty to conduct evaluations which provide confidence that any proposed background standards are representative, definable, and achievable.

√ 32) Page 64, Comment: "Water quality...delete and sediment."

Response: EPA believes surface water sediments and surface waters are part of a single system for standard setting because of their complex interaction. Surface water/bed sediment transfer is reversible; bed sediments often act as temporary repositories for contaminants and gradually release contaminants to surface waters. Sorbed or settled contaminants are frequently transported with bed sediment migration or flow. Typographical errors occur on page 64 of the draft order. The sequence of items c. and d. should be reversed (d. becomes c. and c. becomes d.). The result of this change will provide Ciba-Geigy with more options for proposing surface water and sediment protection standards.

√ 33) Page 66, Comment: "The corrective...to complete."  
"Change to... day..."

Response: Your comment does not identify the proposed time limit or reasons why the specified timeframe, ninety (90) days, is unachievable. Therefore, the Agency cannot agree with this proposed change. EPA believes the timeframes are appropriate.

√ 34) Page 69-70 Comment: "Five factors...criteria."

Response: At this time the draft order does not use costs as a criteria for selection of corrective measures. The cost estimate required by the order will be used solely for the purpose of determining the adequacy of financial assurance for any corrective measure implemented under a subsequent order or action.

Legal Comments

° Findings of Fact, Pages 8 et seq.

Paragraph 1: change "Rhode Island" to "New York".

Paragraph 3: delete as suggested.

Paragraph 12: combine the current wording with the suggestion as follows:

"Sampling data from off site soils obtained during the Rhode Island Department of Environmental Management's sampling studies conducted July 23, 1986 and April 15, 1987 indicate that hazardous constituents have been released into the soil, some of which as the result of several past air releases from the process building area."

° Determination, Pages 18 et seq.

Paragraph 24: that sentence cannot be deleted. It is the minimum statement necessary to invoke the statutory authority to support the Order by Consent. (See § 3008(h) of RCRA, 42 U.S.C. § 6928(h)).

° Section IV, Page 46 and other analogous provisions: it is possible to delete the language starting at "or make such modifications..." (para. 2 second sentence) and reference the modifications to the Dispute Resolution Provisions.

° Section XII, Pages 70-71

Paragraph 3: add the suggested language as indicated.

° Dispute Resolution, Pages 71-72

Paragraph 2: language can be added to state that this decision is appealable through the usual administrative channels.

° Retention and Availability of Information, Page 74

Paragraph 1: designate where the records will be stored.

Perhaps some specific demarcation as to drafts is in order. Language could be added that draft documents will be retained at each phase of the life of the Order, until the final version of that working draft is approved by EPA.

New Paragraph: rather than requiring either Ciba-Geigy or EPA to retain all records for six years, why not require both parties to retain the designated records for the working life of the

corrective action process, from onset to completion of corrective measures if such measures are required.

- Stipulated Penalties, Pages 75 et seq.

As pointed out in prior communications, stipulated penalties are not a waivable provision for the Region. However, alternative formats can be used for triggering penalties, as well as different penalty amounts. These penalties are very low when compared to other orders entered into.

If non-compliance is asserted, clearly EPA would generate a writing within the usual course of oversight of the order. If a specific requirement is desired, it can be included.

The Agency could not collect civil penalties twice for the same violation, unless it occurred at successive points, or it occurred in the context of an enforcement action unrelated to this Order. The waiver request concerning this topic is therefore unclear.

The stipulated penalties can be tolled, to some extent, by Dispute Resolution.

The IRS provision can be deleted, if necessary.

- Force Majeure, Pages 78-79

Paragraph 1: Within a reasonable time is too vague. The time could however, be extended if there really is some hardship or impossibility involved, to ten business days, or some other easily quantifiable amount.

- Reservation of Rights, Pages 79-80

Paragraph 1: See comment under the stipulated penalties section on this topic

- Superfund Claim, Pages 80-81

The purpose of the indemnification is to insure that corrective action under RCRA is implemented under RCRA, not funded under Superfund. The claim is appropriate. Whether or not it is relevant to a unilateral order is not at issue here, as this is an order by consent.

- Other Applicable Laws, Page 81

No problem with setting up priorities. Some draft language would be helpful.

- Indemnification of the U.S., Page 81

The provision makes explicit what is a matter of law. Even though Ciba-Geigy is engaging in the corrective action work under an Order by Consent with EPA, the Agency is not a party to any contractual relationship entered into to implement the order. There would be no claim against the U.S. for the acts mentioned; this provision cuts off needless litigation for the United States. Headquarters will not waive it, nor can the Region.

• Financial Assurance

Paragraph 1: No problem, if this is more realistic

Paragraph 2: No problem. Please provide the proposed schedule.



Summary of Phases for the RFI1) General Comment

- EPA does not approve/disapprove this outline because of the inherent vagueness associated with outlines. Secondly, this outline, or a subsequent version, is part of the RFI Proposal which should be submitted sixty (60) days after signing of the order. Third, a schedule is not proposed. Fourth, the work outline does not address all of the components required of EPA's draft order. Consequently, EPA is providing the following comments relative to major concerns which are apparent in this document. Approval is not explicit nor implied where no comments have been provided.

2) Production Area - Phase I

- An explanation should be provided as to why a geophysical survey of this study area is not necessary.
- An explanation should be provided as to why field screening of this study area is not necessary.
- Soil sampling is proposed, "near SWMU's/areas of concern not sampled thus far." Ciba-Geigy should present arguments based on information contained in the Current Assessment Summary. Previous sampling may not satisfy the intent of the order.
- One round of soil sampling does not satisfy the order.

3) Wastewater Treatment Area - Phase I

- An explanation should be provided as to why the development of a field screening methodology should not take place during development of the RFI proposal.
- One round of soil sampling does not satisfy the order.

4) River Sediment Storage Area - Phase I

- One round of soil sampling does not satisfy the order.
- Explain lack of field screening for this area.

5) Pawtuxet River - Phase I

- Media Protection Standards will be established by the Regional Administrator after submittal of the RFI report.

- The number and location of surface water and sediment sampling points must be justified in the RFI proposal.
- What is the meaning of target parameters? Explain how this meaning is consistent with the terms of the order.
- The order specifies which hydrologic characteristics are needed and therefore there should not be uncertainty in this regard. Historical records and literature searches may be utilized where the data are appropriate for meeting, or contributing to, the requirements of the order.
- The order specifies a site survey which is to include sampling locations and therefore there should not be uncertainty in this regard.

6) Off-site Environment - Phase I

- The data review must address, at the minimum, all applicable terms of the order under Current Assessment. Ciba-Geigy may place additional emphasis in other areas of data review as it deems necessary. Data review should precede the RFI submittal.
- Media Protection Standards (see Pawtuxet River comment)
- Sample number and location must be justified as specified in the order. Data review as part of the Current Assessment may impact sample number and location.
- Target parameters (see Pawtuxet River comment).
- Hydrologic studies, site survey (see Pawtuxet River comment).

7) All Areas - Phase I & II

- At least two sampling events of all media of concern are required by the order for each Phase.